UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/646,716	08/25/2003	Thomas J. Kelly	08350.3304-01	9855

58982 7590 11/28/2007

CATERPILLAR/FINNEGAN, HENDERSON, L.L.P.
901 New York Avenue, NW
WASHINGTON, DC 20001-4413

EXAMINER
HO, CHUONG T

ART UNIT	PAPER NUMBER
2619	

MAIL DATE	DELIVERY MODE
11/28/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/646,716	KELLY ET AL.	
	Examiner	Art Unit	
	CHUONG T. HO	2619	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 September 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *35-42,44 and 46* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *35-42,44,46* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. The amendment filed 09/21/07 have been entered and made of record.

2. Applicant's arguments with respect to claims 35, 36-38, 39-42, 44, 46 have been considered but are moot in view of the new ground(s) of rejection.

3. Claims 35, 36-38, 39-42, 44, 46 are pending.

Drawings

4. The drawings are objected to under 37 CFR 1.83(a) because they fail to show a labeled rectangular box in figures 1, 2, 3, 4, 6, 8, 11 as described in the specification. Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and

informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 35, 36-38, 39-42, 44, 46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bahren (US 7,089,343) in view of Valavi et al. (US 7,180,908).

Regarding to claim 35, Bahren (US 7,089, 343) discloses receiving, by the gateway (figure 1, 103, 107, 109, 108), a message in a first system (CAN system), the message including: a first parameter value in a format consistent with the system (figure 3, lines 45-46, the parameters); and a parameter identifier corresponding to the first parameter value (col. 6, lines 23-25); scaling (col. 5, lines 15-17, differently scaled in the CAN system and MOST system) the first parameter value to a second parameter value consistent with a second system (MOST system) using a scale factor (col. 6, line 10, scaling of parameters) associated with the second system (MOST system); and transmitting the second parameter value via the second system (MOST system) to a destination module (col. 5, lines 15-23, col. 6, lines 10-25, lines 35-40, col. 2, lines 7-10, lines 55-67); extracting the parameter identifier and storing the first parameter value (col. 3, lines 45-46, this class supplied by the buffer memory 111) (col. 5, lines 56-57,

extracting from the most message a function designator three bytes in length and checks whether this is contained in a list of known designators, col. 5, lines 56-57).

However, Bahren (7,089,343) is silent to disclosing receiving, by a gateway, a message in a first data link protocol; and transmitting the message via the second data link protocol.

Valavi et al. (7,180,908) discloses receiving, by a gateway, a message in a first data link protocol; and transmitting the message via the second data link protocol (see claim 9, col. 8, lines 13-15, The method of claim 7, wherein the step of directing the data signals received over the first group of conductors comprises directing the data signals to a first protocol-specific switch that is capable of interpreting a first protocol; and wherein the step of directing the data signals received over the second group of conductors comprises directing the data signals to a second protocol-specific switch that is capable of interpreting a second protocol); extracting the parameter identifier (col. 8, lines 36-37, claim 14, wherein the port is a first port of a plurality of ports, the method further comprising: extracting a first destination address from the data signals received over the first group of conductors; redirecting the data signals received over the first group of conductors to a second port of the plurality of ports, the destination address for the data signals received over the first group of conductors corresponding to the second port; extracting a first destination address from the data signals received over the second group of conductors; and redirecting the data signals received over the second group of conductors to a third port of the plurality of ports, the destination address for

the data signals received over the first group of conductors corresponding to the third port).

Both Bahren and Valavi disclose converting the messages from the first protocol system to the second protocol system. Valavi recognizes receiving, by a gateway, a message in a first data link protocol; and transmitting the message via the second data link protocol. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate receiving, by a gateway, a message in a first data link protocol; and transmitting the message via the second data link protocol taught by Valavi into the system of Bahren in order to communicate data from single data link protocol to multiple data link protocols. Therefore, the combined system would have been enable to determine the inconsistent protocols, and to provide corresponding interface devices.

7. Regarding to claim 36, Bahren discloses receiving, by a gateway, a message in a first system (CAN system) used by a machine, the message including a parameter identifier; matching, by the gateway, the parameter identifier with a corresponding parameter identifier included in a translation table associated with the gateway, scaling a parameter value contained in the message to a second parameter value consistent with a second system using a scale factor associated with the matched parameter identifier, and sending a message including the second parameter value to module using the second system (MOST system) (figure 3, lines 45-46, the parameters) (col. 6, lines 23-25) (col. 5, lines 15-17, differently scaled in the CAN system and MOST system) (col. 5, lines 15-23, col. 6, lines 10-25, lines 35-40, col. 2, lines 7-10, lines 55-

67) (col. 3, lines 45-46, this class supplied by the buffer memory 111) (col. 5, lines 56-57, extracting from the most message a function designator three bytes in length and checks whether this is contained in a list of known designators, col. 5, lines 56-57).

However, Bahren (7,089,343) is silent to disclosing receiving, by a gateway, a message in a first data link protocol; and transmitting the message via the second data link protocol.

Valavi et al. (7,180,908) discloses receiving, by a gateway, a message in a first data link protocol; and transmitting the message via the second data link protocol (see claim 9, col. 8, lines 13-15, The method of claim 7, wherein the step of directing the data signals received over the first group of conductors comprises directing the data signals to a first protocol-specific switch that is capable of interpreting a first protocol; and wherein the step of directing the data signals received over the second group of conductors comprises directing the data signals to a second protocol-specific switch that is capable of interpreting a second protocol); extracting the parameter identifier (col. 8, lines 36-37, claim 14, wherein the port is a first port of a plurality of ports, the method further comprising: extracting a first destination address from the data signals received over the first group of conductors; redirecting the data signals received over the first group of conductors to a second port of the plurality of ports, the destination address for the data signals received over the first group of conductors corresponding to the second port; extracting a first destination address from the data signals received over the second group of conductors; and redirecting the data signals received over the second group of conductors to a third port of the plurality of ports, the destination address for

the data signals received over the first group of conductors corresponding to the third port).

Both Bahren and Valavi disclose converting the messages from the first protocol system to the second protocol system. Valavi recognizes receiving, by a gateway, a message in a first data link protocol; and transmitting the message via the second data link protocol. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate receiving, by a gateway, a message in a first data link protocol; and transmitting the message via the second data link protocol taught by Valavi into the system of Bahren in order to communicate data from single data link protocol to multiple data link protocols. Therefore, the combined system would have been enable to determine the inconsistent protocols, and to provide corresponding interface devices.

8. Regarding to claim 37, Bahren discloses the limitations of claim 36 above. However, Bahren is silent to disclosing the first data link protocol is a proprietary data link protocol.

Valavi discloses the first data link protocol is a proprietary data link protocol (see abstract).

Both Bahren and Valavi disclose converting the messages from the first protocol system to the second protocol system. Valavi recognizes receiving, by a gateway, a message in a first data link protocol; and transmitting the message via the second data link protocol. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate receiving, by a gateway, a message in a first data

link protocol; and transmitting the message via the second data link protocol taught by Valavi into the system of Bahren in order to communicate data from single data link protocol to multiple data link protocols. Therefore, the combined system would have been enable to determine the inconsistent protocols, and to provide corresponding interface devices.

9. Regarding to claim 38, Bahren discloses wherein the second data link protocol is a non-proprietary protocol including one of a J1939 protocol, a CAN protocol (CAN system), a MODBUS protocol, a serial standard data link protocol, and an Ethernet protocol. (see figure 1) (CAN system).

10. Regarding to claim 39, Bahren discloses a translation table (col. 3, lines 30-35, rule) implemented in a memory device, the translation table including: at least one parameter identifier (col. 5, lines 15-25, parameters), a plurality of scale factors (col. 5, lines, 15-25, different scaled) associated with the at least one parameter identifier, wherein each of the plurality of scale factor corresponds to a different system (MOST system), and a universal storage section for storing a parameter data value associated with the at least one parameter identifier; and a gateway residing in a machine configured to access the translation table, wherein the gateway device: receives a message, including a first parameter identifier and a first parameter value, from a first system used by the machine, determining the first parameter identifier matches the at least one parameter identifier in the translation table (col. 3, lines 65-67), when a match is found by the gateway, scales (col. 5, lines 15-25, scaled) the first parameter value to a second parameter value consistent with a second system (MOST system) using the

scaled factor corresponding to the matched parameter identifiers, and outputs the second parameter value to a second data link using the second system (MOST system) (figure 3, lines 45-46, the parameters) (col. 6, lines 23-25) (col. 5, lines 15-17, differently scaled in the CAN system and MOST system) (col. 5, lines 15-23, col. 6, lines 10-25, lines 35-40, col. 2, lines 7-10, lines 55-67) (col. 3, lines 45-46, this class supplied by the buffer memory 111) (col. 5, lines 56-57, extracting from the most message a function designator three bytes in length and checks whether this is contained in a list of known designators, col. 5, lines 56-57).

However, Bahren (7,089,343) is silent to disclosing receiving, by a gateway, a message in a first data link protocol; and transmitting the message via the second data link protocol.

Valavi et al. (7,180,908) discloses receiving, by a gateway, a message in a first data link protocol; and transmitting the message via the second data link protocol (see claim 9, col. 8, lines 13-15, The method of claim 7, wherein the step of directing the data signals received over the first group of conductors comprises directing the data signals to a first protocol-specific switch that is capable of interpreting a first protocol; and wherein the step of directing the data signals received over the second group of conductors comprises directing the data signals to a second protocol-specific switch that is capable of interpreting a second protocol); extracting the parameter identifier (col. 8, lines 36-37, claim 14, wherein the port is a first port of a plurality of ports, the method further comprising: extracting a first destination address from the data signals received over the first group of conductors; redirecting the data signals received over the first

group of conductors to a second port of the plurality of ports, the destination address for the data signals received over the first group of conductors corresponding to the second port; extracting a first destination address from the data signals received over the second group of conductors; and redirecting the data signals received over the second group of conductors to a third port of the plurality of ports, the destination address for the data signals received over the first group of conductors corresponding to the third port).

Both Bahren and Valavi disclose converting the messages from the first protocol system to the second protocol system. Valavi recognizes receiving, by a gateway, a message in a first data link protocol; and transmitting the message via the second data link protocol. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate receiving, by a gateway, a message in a first data link protocol; and transmitting the message via the second data link protocol taught by Valavi into the system of Bahren in order to communicate data from single data link protocol to multiple data link protocols. Therefore, the combined system would have been enable to determine the inconsistent protocols, and to provide corresponding interface devices.

11. Regarding to claim 40, claim 40 is rejected the same reasons of claim 37 above.

12. Regarding to claim 41, Bahren discloses wherein the first data link protocol is a non-proprietary protocol including one of a J1939 protocol, a CAN protocol (CAN system), a MODBUS protocol, a serial standard data link protocol, and an Ethernet protocol. (see figure 1) (CAN system).

13. Regarding to claim 42, claim 42 is rejected the same reasons of claim 38 above.

14. Regarding to claim 46, Bahren discloses receiving, by a gateway, a message in a first system (CAN system) used by a machine, the message including a parameter identifier; matching, by the gateway, the parameter identifier with a corresponding parameter identifier included in a translation table associated with the gateway, scaling a parameter value contained in the message to a second parameter value consistent with a second system using a scale factor associated with the matched parameter identifier, and sending a message including the second parameter value to module using the second system (MOST system) (figure 3, lines 45-46, the parameters) (col. 6, lines 23-25) (col. 5, lines 15-17, differently scaled in the CAN system and MOST system) (col. 5, lines 15-23, col. 6, lines 10-25, lines 35-40, col. 2, lines 7-10, lines 55-67) (col. 3, lines 45-46, this class supplied by the buffer memory 111) (col. 5, lines 56-57, extracting from the most message a function designator three bytes in length and checks whether this is contained in a list of known designators, col. 5, lines 56-57).

However, Bahren (7,089,343) is silent to disclosing receiving, by a gateway, a message in a first data link protocol; and transmitting the message via the second data link protocol.

Valavi et al. (7,180,908) discloses receiving, by a gateway, a message in a first data link protocol; and transmitting the message via the second data link protocol (see claim 9, col. 8, lines 13-15, The method of claim 7, wherein the step of directing the data signals received over the first group of conductors comprises directing the data signals to a first protocol-specific switch that is capable of interpreting a first protocol; and

wherein the step of directing the data signals received over the second group of conductors comprises directing the data signals to a second protocol-specific switch that is capable of interpreting a second protocol); extracting the parameter identifier (col. 8, lines 36-37, claim 14, wherein the port is a first port of a plurality of ports, the method further comprising: extracting a first destination address from the data signals received over the first group of conductors; redirecting the data signals received over the first group of conductors to a second port of the plurality of ports, the destination address for the data signals received over the first group of conductors corresponding to the second port; extracting a first destination address from the data signals received over the second group of conductors; and redirecting the data signals received over the second group of conductors to a third port of the plurality of ports, the destination address for the data signals received over the first group of conductors corresponding to the third port).

Both Bahren and Valavi disclose converting the messages from the first protocol system to the second protocol system. Valavi recognizes receiving, by a gateway, a message in a first data link protocol; and transmitting the message via the second data link protocol. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate receiving, by a gateway, a message in a first data link protocol; and transmitting the message via the second data link protocol taught by Valavi into the system of Bahren in order to communicate data from single data link protocol to multiple data link protocols. Therefore, the combined system would have

been enable to determine the inconsistent protocols, and to provide corresponding interface devices.

15. Regarding to claim 44, Bahren discloses a source module for sending a source message including content consistent with a first system (CAN system) , the source module couple to a source data link; a destination module for receiving the source message, the destination module located at a distance from the source module that exceeds a transmission range of the fist system; a first gateway (figure 1, 103)coupled to the source data link and an intermediate data link, the intermediate data link using a second system (MOST system), the gateway configured to: receiving the message from the source data link in the first system, encapsulate the message within the transmission unit consistent with the second system, and output the encapsulated message to the intermediate data link using the second system; and second gateway (figure 1, 108) coupled to the intermediate data link and the destination module, the second gateway (figure 1, 108) configured to: receiving the encapsulated message from the intermediate data link; extract the source message; translate content of the source message to a format consistent with a second system (MOST system) different from the first system (CAN system) used by a destination data link coupled to the destination module; and route the translated message to the destination module over the destination data link (figure 3, lines 45-46, the parameters) (col. 6, lines 23-25) (col. 5, lines 15-17, differently scaled in the CAN system and MOST system) (col. 5, lines 15-23, col. 6, lines 10-25, lines 35-40, col. 2, lines 7-10, lines 55-67) (col. 3, lines 45-46, this class supplied by the buffer memory 111) (col. 5, lines 56-57, extracting from the

most message a function designator three bytes in length and checks whether this is contained in a list of known designators, col. 5, lines 56-57).

However, Bahren (7,089,343) is silent to disclosing receiving, by a gateway, a message in a first data link protocol; and transmitting the message via the second data link protocol.

Valavi et al. (7,180,908) discloses receiving, by a gateway, a message in a first data link protocol; and transmitting the message via the second data link protocol (see claim 9, col. 8, lines 13-15, The method of claim 7, wherein the step of directing the data signals received over the first group of conductors comprises directing the data signals to a first protocol-specific switch that is capable of interpreting a first protocol; and wherein the step of directing the data signals received over the second group of conductors comprises directing the data signals to a second protocol-specific switch that is capable of interpreting a second protocol); extracting the parameter identifier (col. 8, lines 36-37, claim 14, wherein the port is a first port of a plurality of ports, the method further comprising: extracting a first destination address from the data signals received over the first group of conductors; redirecting the data signals received over the first group of conductors to a second port of the plurality of ports, the destination address for the data signals received over the first group of conductors corresponding to the second port; extracting a first destination address from the data signals received over the second group of conductors; and redirecting the data signals received over the second group of conductors to a third port of the plurality of ports, the destination address for

the data signals received over the first group of conductors corresponding to the third port).

Both Bahren and Valavi disclose converting the messages from the first protocol system to the second protocol system. Valavi recognizes receiving, by a gateway, a message in a first data link protocol; and transmitting the message via the second data link protocol. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate receiving, by a gateway, a message in a first data link protocol; and transmitting the message via the second data link protocol taught by Valavi into the system of Bahren in order to communicate data from single data link protocol to multiple data link protocols. Therefore, the combined system would have been enable to determine the inconsistent protocols, and to provide corresponding interface devices.

16. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHUONG T. HO whose telephone number is (571) 272-3133. The examiner can normally be reached on 8:00 am to 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, ORGAD EDAN can be reached on (571) 272-7884. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

11/21/07

EDAN . ORGAD
SUPERVISORY PATENT EXAMINER